

**NEZ Infratech Private Limited****Civil Engineering Consultants**

CIDC Regd No 220929



No.1, 2nd Floor, P. Veerappa Arcade, Ittamadu Main Road, Archalli, Subramanyapura Post, Bengaluru - 560061
 Phone No : + 91 80 26731005, 43008989 e-mail : nezsvy@gmail.com nezsvy@yahoo.co.in
 CIN:U70100KA2015PTC084544, PAN:AAFNC1036R, GSTIN 29AAFCN1036R1ZZ

Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure - Dasarahalli Division
Agency	M/s. SLV Constructions, #78, 14th Main Road, 1st cross, 2nd stage, Bharath Nagar, Near Balaji Temple, Bengaluru-560091
Name of the work	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).
Sample Identification	Cement
Technical References	IS: 4031 Part -II

SPECIFIC GRAVITY OF CEMENT

Section/ Location of Lab	: NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Name/Brand of Cement	: ACC
Grade of Cement	: O.P.C- 53 Grade
Date of testing	: 5/2/2022

Determination	Trail No.			Average
	1	2	3	
Weight of bottle (w1)	122	122	122	122
Weight of bottle with sample (w2)	180	181	179	180
Weight of bottle with sample and kerosene(w3)	373	375	372	373
Weight of bottle with kerosene (w4)	331	330	330	330
Specific Gravity of Kerosene	0.79	0.79	0.79	0.79
Specific Gravity of cement	3.14	3.12	3.13	3.13

Remarks: The Specific Gravity of Cement as per IS 4031 - Part -II is nearly 3.15

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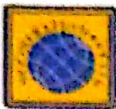
ಪುನರಾವೇಶ ಮಾಡಿದ ದಿನಾಂಕ: 5/2/2022
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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	M/s. SLV Constructions, #78, 14th Main Road, 1st cross, 2nd stage, Bharath Nagar, Near Balaji Temple, Bengaluru-560091
Name of the work	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).
Sample Identification	Cement
Technical References	IS: 4031 Part -I

FINENESS OF CEMENT (IS: 4031 PART- I)	
Section/ Location of Lab	: NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Name/Brand of Cement	: ACC
Grade of Cement	: O.P.C- 53 Grade
Date of testing	: 5/2/2022

Sl. No.	DESCRIPTION	1	2	3	SPECIFIED LIMIT AS PER IS 8112
1	Wt. of Sample taken (W1) gm	100	100	100	Max. 10%
2	Wt. of residue on 90 mic. sieve (W2) gm	6.92	7.54	7.65	
3	Fineness (%) (W2/W1)X100	6.92	7.54	7.65	
	Average (%)	7.37			

Remarks: The test for Fineness of cement has passed and within the limit as specified by IS code.

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Client	BRUHATH BENGALURU MAHANAGARA PALIKE (BBMP) Road Infrastructure – Dasarahalli Division
Agency	M/s. SLV Constructions, #78, 14th Main Road, 1st cross, 2nd stage, Bharath Nagar, Near Balaji Temple, Bengaluru-560091
Name of the work	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).
Sample Identification	Cement
Technical References	IS: 4031 & IS: 269-2015.

PHYSICAL TESTS ON CEMENT

Section/ Location of Lab	:	NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Name/Brand of	:	ACC- 53 Grade
Type	:	O.P.C
Period of test	:	5/2/2022

Sl. No.	Name of Test	Test Result	Requirements as per IS 269-2015
1	Initial setting time	139 min	Shall not be less than 30 min
2	Final setting time	251 min	Shall not be more than 600 min
3	Compressive strength a) 3 days b) 7 days	30.5 N/ Sq mm 46.2 N/ Sq mm	Shall not be less than 27 N/ Sq mm 37 N/ Sq mm

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 ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
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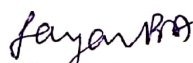
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CHEMICAL TESTS

Sl. No.	Name of Test	Test Result	Requirements as per IS 269-2015
1	Ratio of percentage of lime to percentage of silica, alumina and iron oxide	0.89	0.66-1.02
2	Ratio of percentage of Alumina to Iron Oxide	1.32	Not less than 0.66
3	Insoluble Residue (% by mass)	2.41	Not more than 5%
4	Magnesia, (% by mass)	0.92	Not more than 6%
5	Sulphuric anhydride, (% by mass)	3.0	Not more than 3.5%
6	Total loss on Ignition (% by mass)	1.8	Not more than 5%
7	Total chlorides (% by mass)	0.0215	0.10 max

Remarks: the physical and chemical properties of the cement are within the permissible limits.


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QUALITY TEST REPORT ON FINE AGGREGATE

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Agency	M/s. SLV Constructions, #78, 14th Main Road, 1st cross, 2nd stage, Bharath Nagar, Near Balaji Temple, Bengaluru-560091
Name of the work	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).
Sample Identification	Fine aggregates - M sand
Technical References	IS: 383-2016

SEIVE ANALYSIS OF FINE AGGREGATE

Section/ Location of Lab	: NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Source of Material	: M-Sand
Date of Testing	: 9/2/2022

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-2016 Percentage Passing				Remarks
		Zone-I	Zone-II	Zone-III	Zone-IV	
10	100	100	100	100	100	The Sample Conforms to Grading Zone-II
4.75	96.2	90-100	90-100	90-100	95-100	
2.36	80.8	60-95	75-100	85-100	95-100	
1.18	63.5	30-70	55-90	75-100	90-100	
600.mic	45.2	15-34	35-59	60-79	80-100	
300.mic	24.7	5-20	8-30	12-40	15-50	
150.mic	11.3	0-20	0-20	0-20	0-15	

Remarks: the fine aggregate conforms to specification of zone II.

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Sample Identification	Fine aggregates - M sand
Technical References	IS: 383-2016

SPECIFIC GRAVITY OF FINE AGGREGATE

Section/ Location of Lab	: NEZ INFRATECH PRIVATE LIMITED No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
Source of Material	: M-Sand
Date of Testing	: 9/2/2022

BY PYCNOMETER METHOD

Description	1	2	3
Pycnometer Bottle Number	A	B	C
Weight of Pycnometer(W1) (g)	446	446	446
Weight of Pycnometer + Sample (W2) (g)	980	975	973
Weight of bottle + Water + Sample (W3)(g)	1535	1530	1528
Weight of Pycnometer + Water (W4)(g)	1200	1200	1200
Specific Gravity	2.68	2.65	2.66
Water Absorption	0.81	0.60	0.78
Average Specific Gravity	2.66		
Average Water Absorption (%)	0.73		

Remarks: The obtained specific gravity of sand conforms to the permissible limits.

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QUALITY TEST REPORT ON COARSE AGGREGATE



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Name of the work	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).
Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -1

SEIVE ANALYSIS OF COARSE AGGREGATE

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
 No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road, Bengaluru 560061
 Source of Material : Coarse Aggregate
 Date of Testing : 14/2/2022 Total Wt. of Sample : 3000gm

IS Sieve Size, mm	Wt. Retained (g)	% of Wt. Retained	% Cumulative Wt. Retained	% Passing	Specified % of passing
25	0	0	0	100	100
20	75	2.5	6.9	93.1	85-100
10	2813	93.76	96.79	3.21	0-20
4.75	92	3.06	99.58	0.42	0-5
Pan	20	0.68	100	0	

Remarks: The obtained gradation conforms to the specified range as per IS 2386 Part-1

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 ಈ ಮಾನ್ಯತೆ ಪಡೆದವರು, (ಮಾನ್ಯತೆ ನೀಡಿದ)
 ನಗರ ಮಹಾನಗರ ಮಂಡಳಿ

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Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -1

**FLAKINESS INDEX AND ELONGATION INDEX
(IS:2386 PART-I)**

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
 No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road,
 Bengaluru 560061

Type of Material : Coarse Aggregate

Date of Testing : 14/2/2022 Total Wt. of Sample : 6000gm

IS Sieve Size, mm		Total Weight of Aggregate taken (g)	Weight of aggregate Retained on sieve(g)	Wt. of flaky Aggregates (g)	Wt. of Retained Aggregates on flaky(g)	Wt. of Elongated Aggregates (g)
Passing	Retained	6000				
25	20		3098	482	2674	186
20	16		1850	231	1619	168
16	12.5		585	118	472	84
12.5	10		329	92	238	74
10	6.3		110	36	75	24
Total (gm)			5972	959	5078	536

Flakiness Index = $959/5972 = 0.17$ Elongation Index = $536/5078 = 0.107$ Combined Flakiness and Elongation Indices = $(0.17+0.107)*100 = 27.7 \%$

Remarks: The obtained combined flakiness and elongation index is less than 35% as specified in MORT&H.

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Agency	M/s. SLV Constructions, #78, 14th Main Road, 1st cross, 2nd stage, Bharath Nagar, Near Balaji Temple, Bengaluru-560091
Name of the work	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).
Sample Identification	Coarse aggregates
Technical References	IS: 2386 Part -IV

**AGGREGATE IMPACT VALUE
(IS:2386 PART-IV)**

Section/ Location of Lab : NEZ INFRATECH PRIVATE LIMITED
 No.1, 2nd Floor, P.Veerappa Arcade, Ittamadu Main Road,
 Bengaluru 560061

Type of Material : Coarse Aggregate Date of Testing: 14/2/2022

Total Wt. of Sample : 6000gm

Description	Symbol	Unit	Determinations		
			1	2	3
Weight of aggregate passing through IS Sieve 12.5mm & retained on 10mm	W1	g	335	336	332
Weight of fraction retained on 2.36 mm IS Sieve	W2	g	260.6	260.4	257.6
Weight of fraction passing through 2.36 mm IS Sieve	W3=W1-W2	g	74.37	75.6	74.4
Aggregate Impact Value	(W3/W1)X100	%	22.2	22.5	22.4
Average Aggregate Impact Value		%	22.3		

Remarks: the aggregate impact value obtained is lesser than 30% as specified in MORT&H.

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Name of the work	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).
Sample Identification	Coarse aggregates
Technical References	IS: 2386, IS: 383 - 2016 & MORT&H Specification V th Revision - 2013.

SOUNDNESS TEST OF COARSE AGGREGATES			
Sl. No.	Test Conducted	Test Result	Test Confirms to IS 2386(Part I to IV) - 1963(R.A on 2007) & Requirements as per IS: 383-2016 & M.o.R.T.H Specification, V th Revision - 2013.
1	i) When tested with Sodium Sulphate, %	0.95	Not more than 12%
	ii) When tested with Magnesium Sulphate, %	1.15	Not more than 18%

Remarks: The obtained soundness test result is within the permissible limits as per IS-2386 and IS 383-2016.

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Date: 02/08/2018
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